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Notice of Allowability	Application No.	Applicant(s)	
	10/761,084	LEWIS ET AL.	
	Examiner	Art Unit	
	John C. Hong	3726	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--
 All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment filed 1/23/06.
2. ☒ The allowed claim(s) is/are 4-28.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| <ol style="list-style-type: none"> 1. <input type="checkbox"/> Notice of References Cited (PTO-892) 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | <ol style="list-style-type: none"> 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. 7. <input type="checkbox"/> Examiner's Amendment/Comment 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance 9. <input type="checkbox"/> Other _____. |
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REASONS FOR ALLOWANCE

1. The following is an examiner's statement of reasons for allowance:

The prior art fails to teach: Regarding Claim(s) 4, a method of limiting the travel of an assembly tool used within a workstation, the method comprising the steps: setting at least one spatial boundary of a workstation such that the workstation is adapted to sequentially receive movable work-pieces, the workstation being further adapted to receive only a single work-piece- at any one time; providing an assembly tool comprising: a base; an end use device adapted to perform an assembly operation upon such work-pieces; a flexible connector having a first end connected to the base and a second end connected to the end use device, the flexible connector extendable to a length that allows travel of the end use device beyond a selected boundary of the workstation; and attaching the travel limiting assembly to at least one portion of the assembly tool such that travel of the end use device is selected to within a tool travel envelope defined, at least in part, by the selected boundary of the workstation; Regarding Claim(s) 22, A method for performing assembly operations upon a plurality work-pieces moved by an automatic conveyance system, the method comprising the steps: providing a primary workstation disposed upon the conveyor footprint and at least one secondary workstation disposed upon the conveyor footprint adjacent to the primary workstation, the primary workstation being further adapted to receive only a single work-piece at any one time, the primary workstation having a first assembly tool disposed so as to perform a first assembly operation upon the first point-of-use of each such work-piece as maybe sequentially received within the primary workstation, the first assembly tool comprising: a base; an end use device adapted to perform a first assembly operation

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upon the first point-of-use of such work-pieces; and a flexible connector having a first end connector to the base and a second end connected to the end use device, the flexible connector being extendable such that, for at least one secondary workstation, the travel of the end use device would allow the end use device to be positioned so as to perform a first assembly operation upon the first point-of-use of at least one such work-piece as may be received within such secondary workstation; and attaching the travel limiting assembly to at least one portion of the first assembly tool such that travel of the end use device is restricted so as to prevent the end use device from being positioned upon the first point-of-use of any such work-piece as is received within any secondary workstation; Regarding Claim(s) 27, a method for performing assembly operations upon a plurality work-pieces moved by an automatic conveyance system, the method comprising the steps: providing an automatic conveyance system comprising: a work-station defined along a conveyor footprint, the work-station comprising: a work-station envelope; a first fixed stopping point; a second fixed stopping point; a work station forward electronic boundary; and a work station rear electronic boundary; and an integrated conveyor monitoring and control system adapted to control the movement of a plurality of work-pieces into the work-station from an upstream direction and out of the work-station along a downstream direction, each work-piece having at least one point-of-use, wherein the travel of such points-of-use along the conveyor footprint define a horizontal transport line, wherein the work station is adapted to receive an in-station work-piece, the in-station work-piece having an in-station point-of-use for designated assembly operations within work station envelope, and calculating a lateral offset distance,

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the lateral offset distance being the scalar distance measured between the pivot point and a horizontal transport line; $P = (X/2) + Y + Z$, wherein: calculating a pivot point positive horizontal offset using the formula:

P equals the pivot point horizontal offset distance;

X equals the fixed stopping point differential distance;

Y equals the in-station point-of-use offset distance; and

Z equals the out-of-station point-of-use offset distance;

calculating a pivot point negative horizontal offset using the formula:

$P = X - Y$, wherein:

P equals the pivot point horizontal offset distance;

X equals the fixed stopping point differential distance;

Y equals the in-station point-of-use offset distance; and attaching the first end of the clamping assembly to the pivot and attaching the second end of the clamping assembly to the flexible power transfer section so as to form a tethered flexible power conduit providing a reduced assembly tool travel envelope having a radius equal to the reduced travel distance; Regarding Claim(s) 28, a method for performing assembly operations upon a polarity work-pieces moved by an automatic conveyance system, the method comprising the steps:

providing an automatic conveyance system including a work-station

defined; along a conveyor footprint, the work-station comprising:

a work-station envelope; a work station forward boundary; and

a work station rear boundary, wherein the automatic conveyance system is adapted to move a plurality of work-pieces into the work-station from an upstream direction and out of the work-

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station along a downstream direction, each work-piece having at least one point-of-use, and wherein the travel of such point-of-use along the conveyor footprint define a horizontal transport line, wherein the work station is adapted to receive an in-station work-piece, the in-station work-piece having an in-station point-of-use for designated assembly operations within work station envelope, and wherein the automatic conveyance system is adapted to que an out-of-station work-piece having an out-of-station points-of-use upstream and outside of work station envelope; measuring a work station differential distance, differential distance being the scalar distance between the workstation forward boundary and work station rear boundary; measuring an in-station point-of-use offset distance, the in-station point-of-use offset distance being the distance measured from the in-station point-of-use to the work station rear boundary, the in-station point-of-use offset distance being a positive value when measured along the downstream direction and negative when measured along the upstream direction; measuring an out-of-station point-of-use offset distance, the out-of-station point-of-use offset distance being the distance measured :from the work station forward boundary to the out-of-station point-of-use, the out-of-station point-of-use offset distance being a positive value when measured along the downstream direction and negative when measured along the upstream direction; calculating a pivot point negative horizontal point using the formula:

$P = X - Y$, wherein:

P equals the pivot point horizontal offset distance;

X equals the fixed stopping point differential distance;

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Y equals the in-station point-of-use offset distance; an; positioning the pivot to a point being a pivot point horizontal offset distance from the second fixed stopping point and being the lateral offset distance from the horizontal transport line, wherein, if the value of P is greater than the value of X, then the pivot point horizontal offset distance equals the pivot point negative horizontal offset distance, else the pivot point horizontal offset distance equals the pivot point positive horizontal offset distance; calculating a. reduced travel distance using the formula:

$$D = [(W^2)(X/2) + (R^2)]^{1/2} \text{ wherein}$$

D equals the reduced travel distance;

X equals the fixed stopping point differential distance; and R equals the lateral offset distance; and attaching the first end of the clamping assembly to the pivot and attaching the second end of the clamping assembly to the flexible power transfer section so as to form a tethered flexible power conduit providing a reduced assembly tool travel envelope having a radius equal to the reduced travel distance in combination with the other elements of the claimed invention.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John C. Hong whose telephone number is 571-272-4529. The examiner can normally be reached on M-F(07:00-16:30)First Friday Off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bryant can be reached on 571-272-4526. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



John C. Hong
Primary Examiner
Art Unit 3726

jh
February 17, 2006